



The Changing Climate *Effects on Air Quality*



Presented by:
Mary Mullan



June, 2018

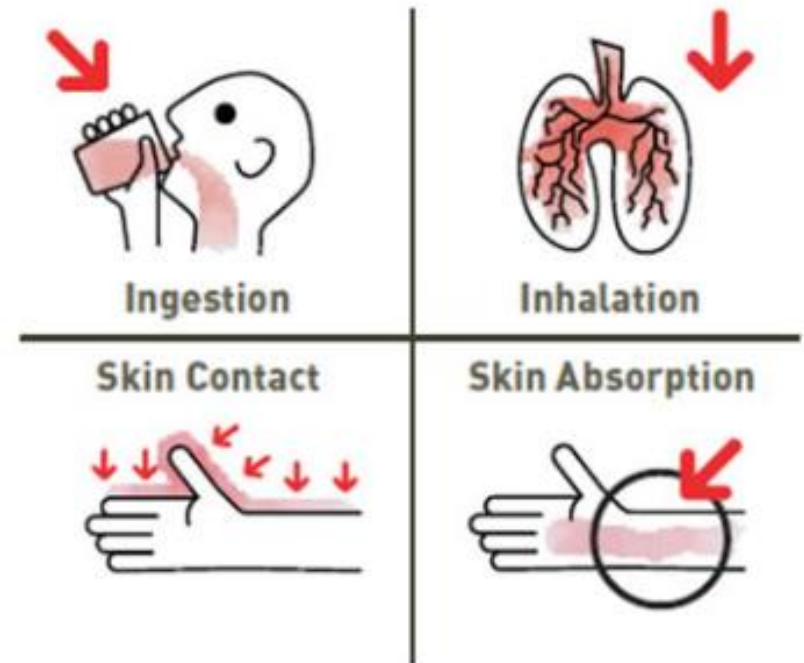
ANTHC Tribal Air Quality Program Associate /
National Tribal Air Association (NTAA) AK Primary Representative

How The Environment Plays A Role

- Environmental Exposures and Risk

- Routes of Exposures

- Inhalation
- Ingestion
- Contact
- Absorption



Carbon Dioxide

The primary greenhouse gas from human activities contributing to climate change is carbon dioxide.

CO₂ Absorbed and emitted naturally by:

- plant and animal respiration
- volcanic eruptions
- ocean-atmosphere exchange

CO₂ From Human Activities:

- fossil fuel burning
- changes in land use
- industrial processes

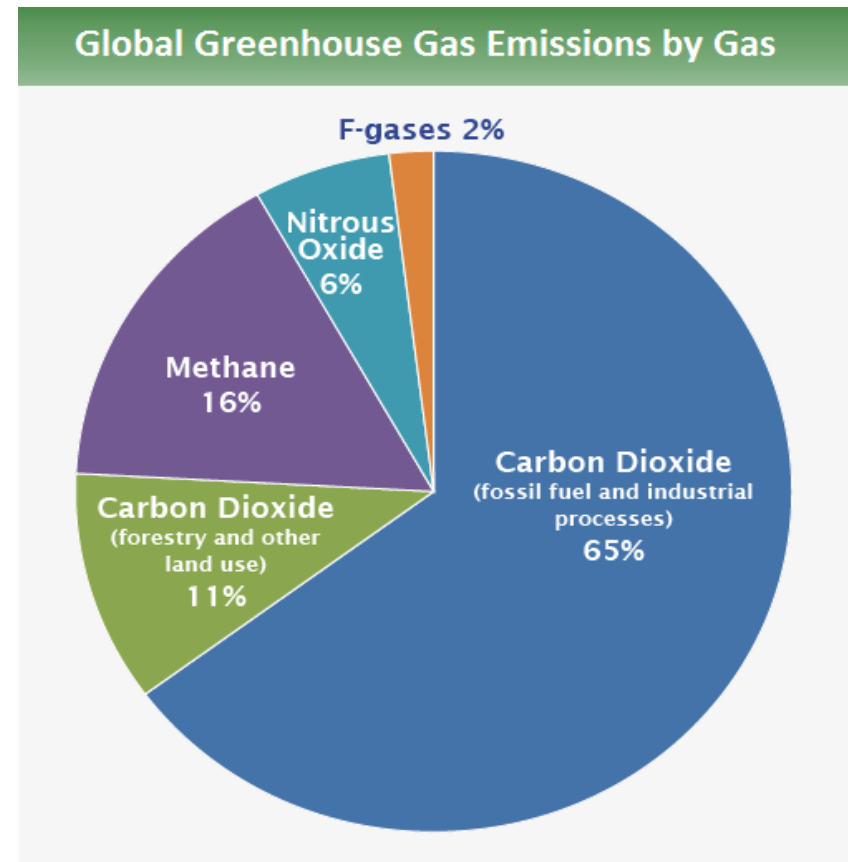


Image: U.S. EPA <https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data>

Air Quality And The Changing Climate



Image: Wikimedia Commons

Potential To:

- Increase in road dust
- Increase in droughts
- Longer wildfire seasons
- Increase allergen seasons
- Increase ground-level ozone

Who Is At Risk??

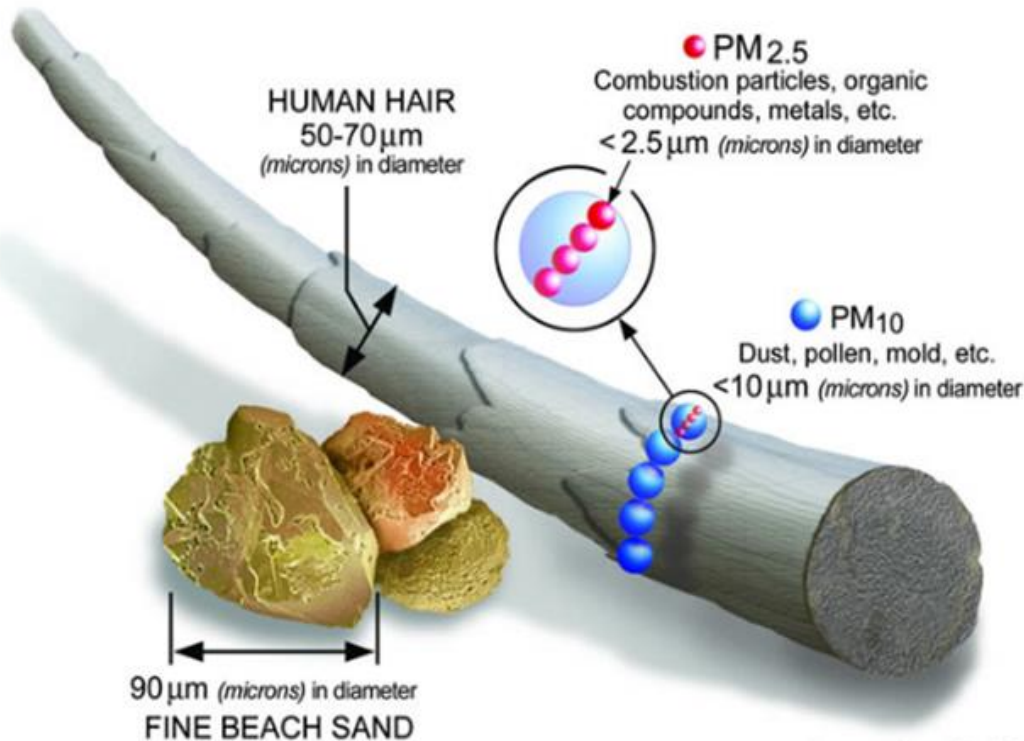


Image courtesy of the U.S. EPA

Wildfires, road dust and other sources contain particulate matter. Regardless of the source, these tiny particulates can cause increased health risks

Especially those with heart or lung disease, elders, and children



Road Dust

Sources

Dirt/gravel roads

Unpaved airport runways

Exposed riverbeds/shorelines

Un-vegetated lots

Gravel pits and stockpiles



What's In The Dust??

- Chemicals
- Bacteria
- Fungi
- Heavy metals



Contamination from oils, fuel, animal feces, waste spillage, toxins from landfill, etc.

What We Can Do....

- Education
- Slowing down
- Reducing number of vehicles on road / walking
- Improve road surface
- Spread water or dust palliatives
- Planting local vegetation
- Clean indoor air



Wildfires

Sources

Man Made

- Unattended campfires
- Debris burning
- Cigarettes
- Arson

Nature

- Lightning
- Lava

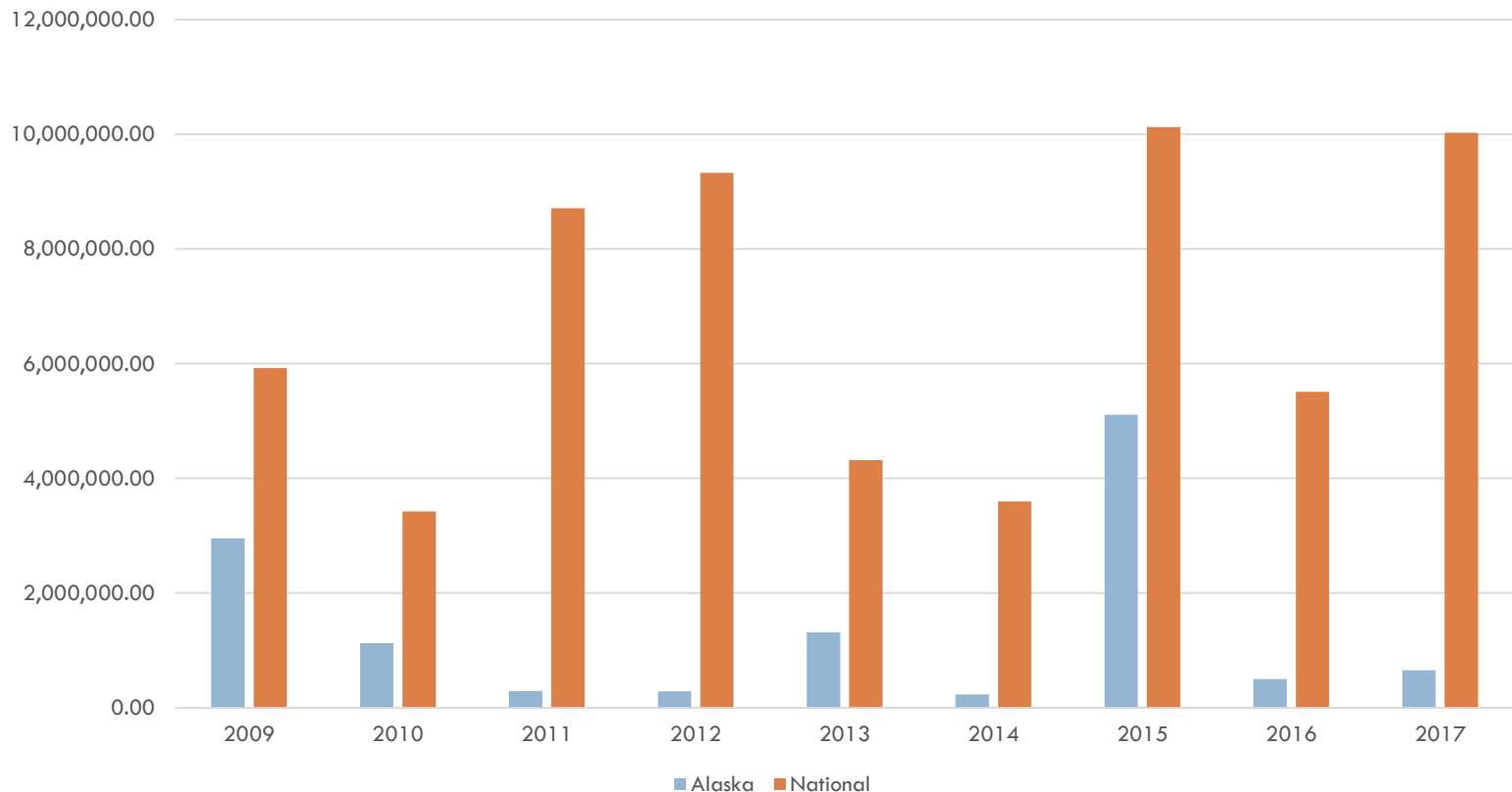
Image: Max Pixel
<https://www.maxpixel.net/Koster-Lake-Forest-Fire-Flame-Mountains-Evening-3221220>



Alaska and National Wildfires

Alaska Department of Natural Resources Division of Forestry and the National Interagency Fire Center

2009 - 2017 Wildfire Acres Burned



What We Can Do...

Provide steps to protect those at risk from wildfire smoke by:

- Education
- Wildfire prevention
- Reducing outdoor activities
- Watch for symptoms such as coughing or shortness of breath
- Keep indoor air clean



Let's Clear the Air: Protect Yourself from Wildfire Smoke



Ground-Level Ozone

Created by chemical reactions between oxides of nitrogen (Nox) and volatile organic compounds (VOCs)

Sources

Vehicle exhaust
Industrial facilities
Electric Utilities
Gas vapors
Chemical solvents

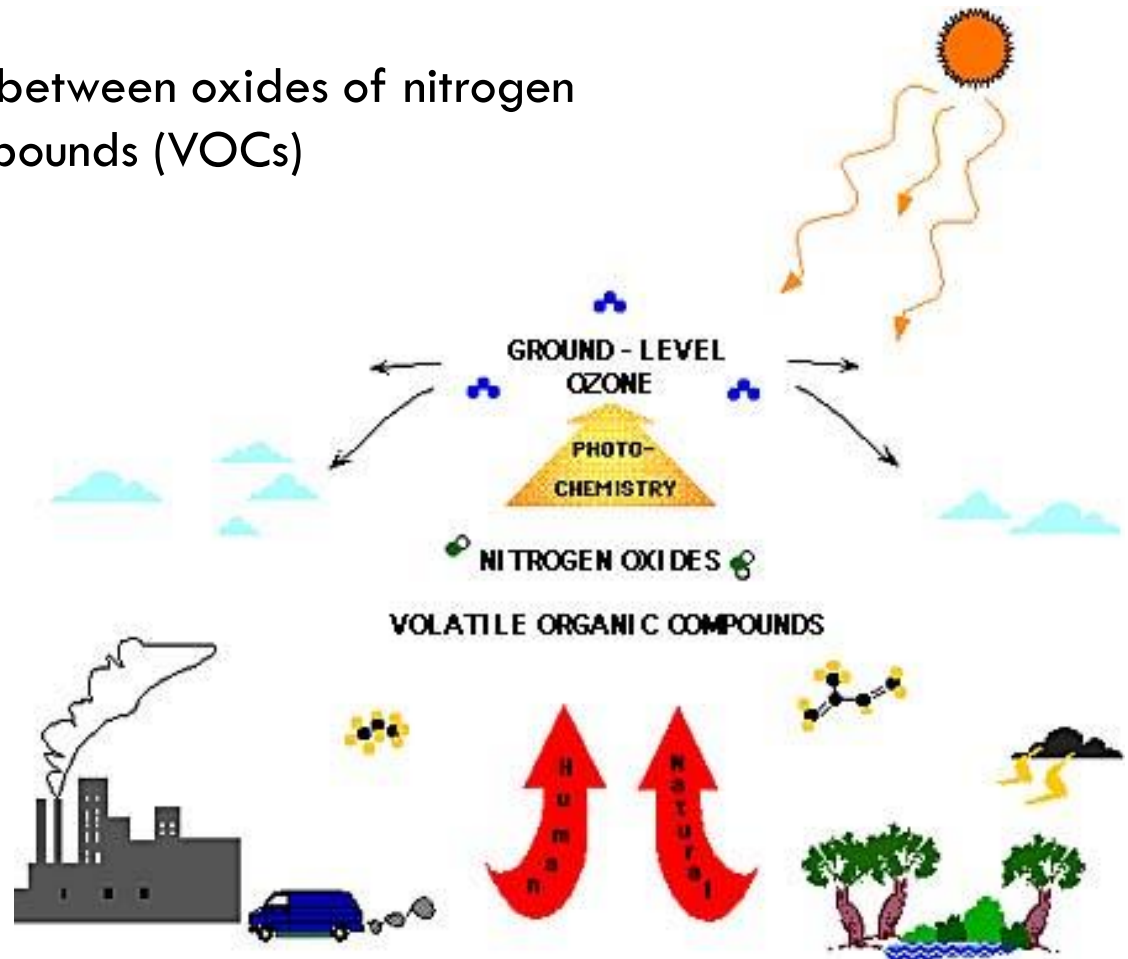


Image: NOAA

Ozone Effects

- Sensitive vegetation / ecosystems
- Respiratory illness



Using a Mask

What We Can Do....



- Education
- Encourage a cleaner commute
- Be diligent not to spill fuel & keep gas cap tightly secured
- Conserve electricity
- Burn only dry, seasoned wood

What Alaska Native Tribal Health Consortium (ANTHC) Can Do...

Support internal departments that can build
Tribal capacity for environmental threats

- **Community Environment & Health (CEH)**
- Clean Water & Sanitation
- Rural Energy
- Construction & Engineering
- Tribal Utility Support (TUS)
- Clinical & Research Services

To Accomplish ANTHC's Vision And Mission...

Our continued work in CEH helps us better understand between our environment, climate, and health



Air Quality & Healthy Homes

Contaminated Sites

Local Environmental Observer Network (LEO)

Food Security

Emergency Preparedness

Environmental Health Field Services

Capacity & Training

A healthy environment is necessary for healthy people

ANTHC Air Quality & Healthy Homes

Resources

Past Awards

Resources

Past Awards

Resources

- Phase I Air Assessment Tool
- Phase II Air Assessment Tool
- ANTHC Healthy Homes Checklist
- ANTHC Air Monitoring Decision Tree
- AQ Fact Sheet
- Do-It-Yourself Bed Bug Control Guide
- Do-It-Yourself Pitfall Trap Handout

Other Resources

- DEC Burnwise Activity Book
- DEC Dust Activity Book
- DEC Reducing Dust in Rural Alaska
- EPA Wood Burning Booklet

Presentations

- Bed Bugs 101
- Introduction to Climate Air Quality Issues
- Radon
- Road Dust
- The Effects of Burning on IAQ and Your Health
- Value of Source Control-Keeping Pollutants Out Of Your Home

Past Awards

ANTHC Tribal Air Quality Program Subawards

The ANTHC Tribal Air Quality Program has provided funding to Tribes to carry out air quality projects in rural Tribal communities since 2011. Projects are encouraged to include creative ways to address air quality concerns. Typical air quality concerns in a community might be indoor air quality, solid waste burning, wood smoke, road dust, outdoor air pollution, etc. Subawardees work in partnership with the ANTHC Tribal Air Quality Program staff to complete the project and refine the work plan. This funding is provided by a US Environmental Protection Agency Clean Air Act 103 Grant.

2011

Aleknagik Traditional Council – The purpose of this project was to evaluate indoor air quality of homes and buildings in Aleknagik and to educate residents on the importance of good air quality. Data was collected on carbon monoxide, carbon dioxide, humidity, temperature, and Particulate Matter 2.5 (PM2.5). The results of the project helped Aleknagik determine how to focus future efforts to improve indoor air quality in their community.

Nunakauyak Traditional Council – This project focused on addressing road dust in the community of Toksook Bay. Efforts began with community education on the health effects of road dust and what residents can do to reduce the amount of road dust. Using project funds, they were also able to purchase speed limit/yield signs and a water sprayer trailer.

Pedro Bay Village Council – The purpose of this project was to perform assessments of homes in Pedro Bay to gather data on what the biggest indoor air quality concerns are in the community. Home assessments included interviews, visual assessments, and photographs. Homeowner education was also provided during the assessments. This project helped the community of Pedro Bay determine what the next steps are to move forward with improving the indoor air quality of homes.

ANTHC Air Quality & Healthy Homes

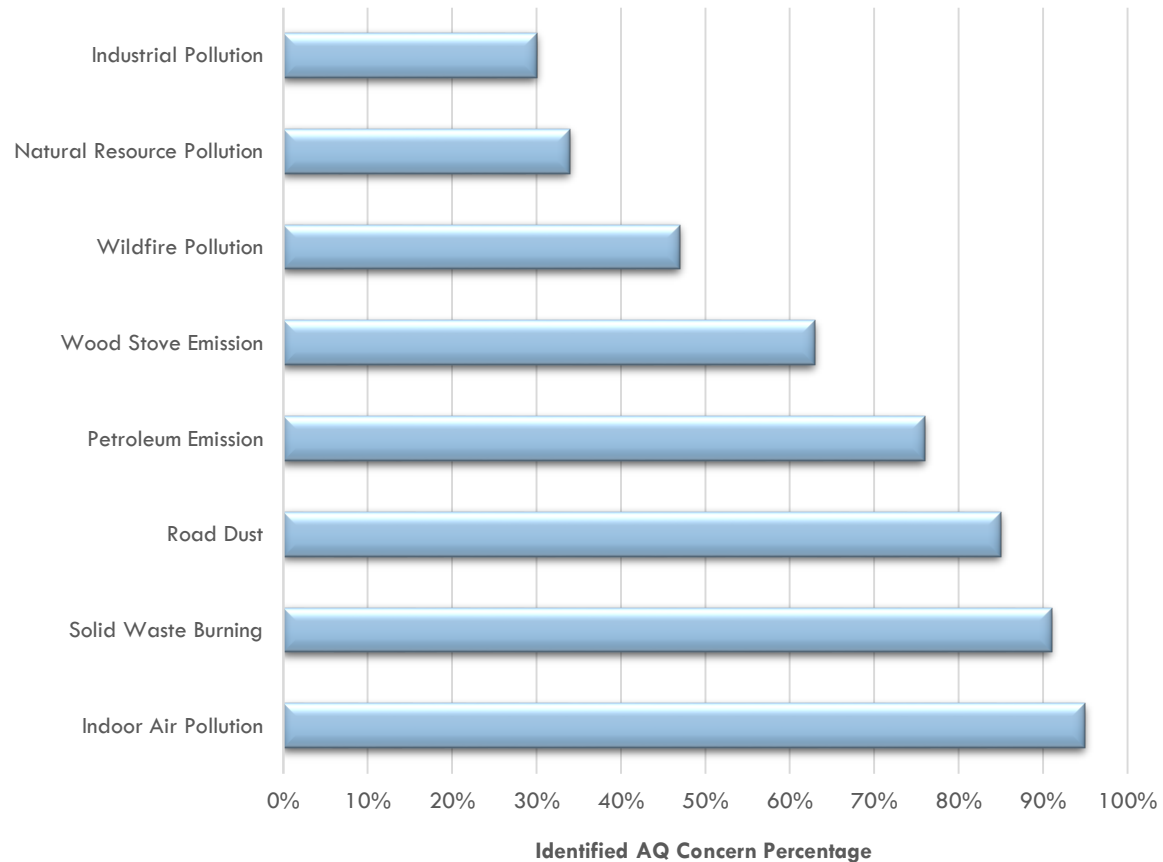
Statewide:

- Technical Assistance (Projects, QAPPS, Funding, etc.)
- Air Monitoring Support & Equipment Loans
- Sub-awards
- Home Assessments
- Special Projects
- Research Studies
- Education / Outreach
- Environmental Consults
- Trainings
- Phase 1 Air Assessments
- Partnerships



Phase 1 Air Assessments

2012 - 2017 Concerns Combined
(n=156)



Phase 1 Air Assessments

Road Dust					
Most roads are not paved with asphalt	Road dust is commonly controlled by spreading water or treating with palliative	Control measures of operating conditions and utilization of controls are inadequate	Dry and windy conditions commonly enhance the production of road dust	Speed limit ordnances have not been passed / speed limit not enforced	Road dust concern by community members
60%	51%	46%	66%	63%	69%

Solid Waste Burning					
Solid waste is commonly burned	A burn box is not available and solid waste is commonly burned	The community burn unit is in poor condition	Solid waste burning takes place near homes, schools and community buildings	Hazardous items are not removed from solid waste before burning	Residents are concerned about solid waste burning
86%	63%	54%	40%	31%	71%

Indoor Air					
Residents are disabling or turning off ventilation systems / known homes without working ventilation	Non-EPA certified wood stoves are common in the community	Burning wet wood in woodstoves is common	Mold is present in many homes in the community	Common for residents to smoke in the home	Residents are concerned about indoor air pollution
77%	59%	54%	80%	40%	80%

Petroleum Emissions			
Diesel generators located near homes, schools or gathering areas	Fuel tank farms located near homes, schools or gathering areas	Ultra low sulfur diesel fuel is not available / fuel employee does not know if the fuel is low sulfur	Residents are concerned about petroleum emissions
57%	46%	51%	34%

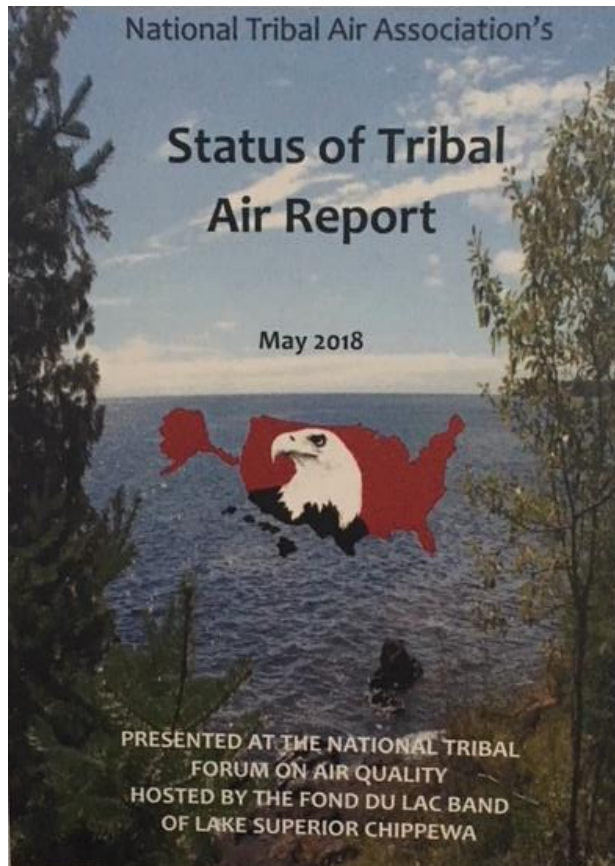
Wood Stove Emissions (Outdoors)	
Heating with woodstoves is common in the community	Residents are concerned about pollution from woodstoves
84%	54%

Wildfires	
Smoke from wildfires is commonly seen or smelled in the community	Residents are concerned about pollution from wildfires
39%	43%

Partnerships & Resources with Institute for Environmental Professionals (ITEP) and National Tribal Air Association (NTAA)



The National Tribal Air Association



Currently 130 Tribal Organization Memberships Nationwide and is one of the nation's largest Tribal membership organizations

- Workgroups, Call, & Webinars
- Status of Tribal Air Report (STAR)
- Weekly Updates
- National Tribal Forum (NTF) on Air Quality
- White Papers
- Advocating
- Tribal Support

Alaska Representatives

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Mary Mullan
(ANTHC)
AK Primary Rep

Ann Wyatt (KCA)
AK Alternate Rep

- Advocate for Alaskan Tribes interests in air policy
- Represent Alaska Tribal air quality needs
 - Promote opportunities
- Increase capacity

Conduct an evaluation on AK Tribes

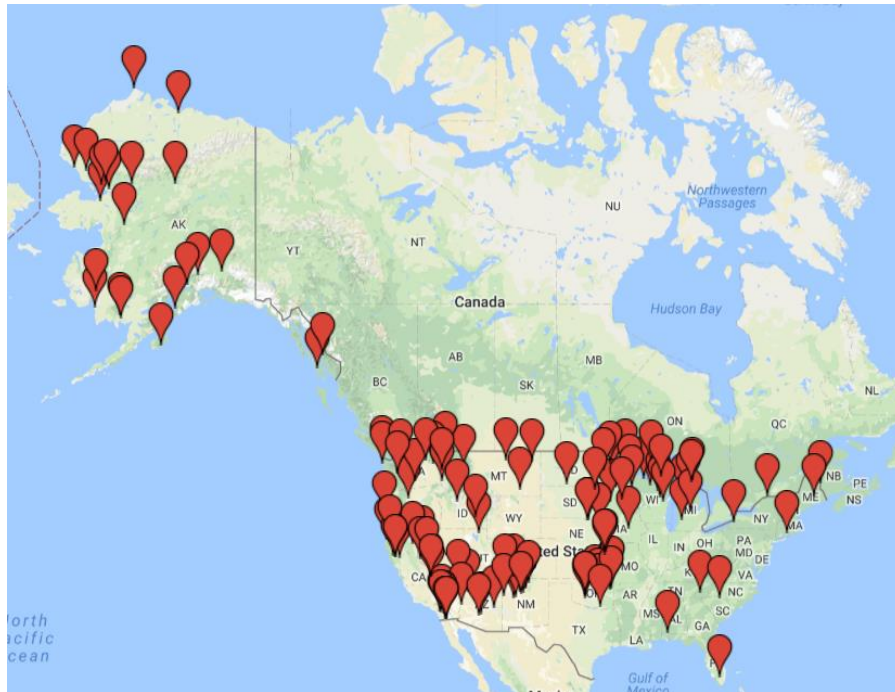
Encourage membership from more AK Tribes

Staying up-to-date with air policy & regulations

Share opportunities & updates (Work groups, funding, policies, etc.) with Tribes

AK Representative Steps

<https://www7.nau.edu/itep/main/ntaa/>



- The Alaska Native Tribal Health Consortium (ANTHC) [Phase 1 Air Assessment](#) not only helps Tribes prioritize air quality issues in their community, it allows a more in-depth overview of needs for Alaska that can be used for advocating for more or different resources and finding solutions. Have you or someone else in your Tribe/organization completed and turned in to the ANTHC Air Program an [ANTHC Phase 1 Air Assessment](#) in the past year?

1. *Yes*
2. *No*
3. *Don't Know*

- Do you feel there are enough Air Quality and Climate Change trainings available for your needs?

7. *Yes*
8. *No*
9. *Don't Know*

- If you have an air quality component in your Indian General Assistance Program (IGAP) workplan what does your component focus on?

1. *Indoor air*
2. *Ambient air*
3. *Monitoring*
4. *Don't Know*
5. *Other:*

- If you have climate change in your [IGAP workplan](#) what does your component focus on?

1. *Adaptation*
2. *Erosion*
3. *Monitoring*
4. *Wildfires*
5. *Food security*
6. *Ocean Acidification*
7. *Don't Know*
8. *Other:*

- What are your biggest concerns regarding air quality and/or climate change in your community?

Workgroups

Agenda

1. Welcome and introductions [Mary Mullan]
2. New Alaska Tribal Air Workgroup leadership and thank you to Sue and Brian for their leadership!
[Mary Mullan, Ann Wyatt, Sue Flensburg, Brian Holter Jr., Andy Bessler]
3. National Tribal Air Association updates [Andy Bessler]
 - a. National Tribal Forum on Air Quality Debrief
 - b. Volkswagen Settlement – NTAA workgroup focused on Alaska Tribes & VW settlement being formed – first meeting on June 7th
 - c. Fact sheets being developed
4. Wildland fire season – resources and how to prepare
 - a. Outlook for the season [Rob Elleman]
 - b. Key websites [wildfire one-pager]
 - c. Outreach tools, e.g. [Aleknagik video](#)
 - d. IGAP workplan template – ideas on preparing for wildfire events
5. Agency Updates
 - a. EPA
 - b. ADEC
 - c. ANTHC
 - d. Tribal Healthy Homes Network
 - e. TAMS
 - f. Others?
6. Tribe to Tribe sharing – open time for sharing air issues or projects
7. Close – topics for next call? [Mary Mullan]

Nationwide Work Group Call/Webinar:

- Indoor Air Quality Work Group
- VW Settlement Work Group
- Wood Smoke Work Group

AK Work Group Call/Webinar:

- AK Quarterly Air Work Group
- AK VW Settlement Work Group

NTAA Resources



National Tribal Air Association
NTAA Weekly Update
 Week of June 11th-June
 15th, 2018

[If you have difficulty reading this email, click here to view it online.](#)

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HUD

Environmental Justice Strategy Draft

> [Click HERE](#) for document.



NTAA HUD
 Factsheet
 > [Click HERE](#)
 for document.



NTAA
 Comment
 Letter
 > [Click HERE](#)
 for document.



Tribal
 Template
 Letter
 > [Click HERE](#)
 for document.

Questions??

Resources:

<https://www7.nau.edu/itep/main/ntaa/>

<https://anthc.org/what-we-do/community-environment-and-health/>

<https://www7.nau.edu/itep/main/Home/>

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